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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,795

11/13/2003

Rosanne Crooke

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7590

10/10/2006

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EXAMINER

EPPS FORD, JANET L

ART UNIT

PAPER NUMBER

1633

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,795

Applicant(s)

CROOKE ET AL.

Examiner

Janet L. Epps-Ford

Art Unit

1633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 109-212 is/are pending in the application.
- 4a) Of the above claim(s) 146-196 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 109-145 and 197-212 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8-25-06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-108 were cancelled.
2. Claims 197-212 were added in the amendment filed 7-17-06. These claims are also under examination.
3. In the response filed 7-17-06 Applicants requested the rejoinder of claims 180-196 as these claims depend from previously indicated as allowable product claim 142. However, upon further consideration the allowability of this claim is withdrawn for the reasons set forth below. Therefore the following claims are presently examined: Claims 109-145, and 197-212. Claims 146-196 remain withdrawn for the reasons of record, since independent claims 109 and 125 are not allowable for the reasons set forth below.

Response to Amendment/Arguments

4. The rejection of claims 109-112 under 35 U.S.C. 102(b) as being anticipated by Olek et al. (WO 2001077384 A2; German language patent, 10-18-2001; citations are given from the English language equivalent US 2004/0241651 A1), is withdrawn in response to Applicant's amendment.
5. The rejection of claims 109-115, 117-118, 120-126, 129-132, 134-135, and 137-141 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett et al. (US Patent No. 6172216, Published January 9, 2001), is withdrawn in response to Applicant's amendment.
6. The rejection of claims 109-126, and 129-141 under 35 U.S.C. 103(a) as being unpatentable over Bennett et al. as applied above, in view of Petersen et al. (May 2002), is withdrawn in response to Applicant's amendment.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 109-124 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. (New matter rejection).

Instant claim 109, and those claims dependent therefrom recite:

109. (New) **An antisense compound 12 to 30 nucleobases in length, wherein said compound specifically hybridizes with up to two mismatches to a sequence in the range of nucleotides 3230-3288 as set forth in SEQ ID NO:3.**

The instant claims include antisense compounds of up to 30 nucleobases in length has at least 8 contiguous nucleobases of nucleotides 3249-3268 of SEQ ID NO: 3, and has no more than two mismatches with respect to SEQ ID NO: 3. However, the specification as filed does not support wherein antisense compounds are designed to specifically hybridize to a *sequence* beyond that of nucleotides 3249-3268, wherein said antisense compound comprises up to two mismatches with said sequence. Therefore, the only support for no more than two mismatches with respect to SEQ ID NO: 3, is wherein said mismatches are within the nucleotide sequence of 3249-3268 of SEQ ID NO: 3.

Applicant's amendment is therefore considered new matter. Applicants must cancel the new matter in response to this Office Action.

9. Claims 142-145 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 142 recites the phrase "having a sequence of nucleobases as set forth in SEQ ID NO: 247." The metes and bounds of this phrase are vague and indefinite since it is unclear if the scope of this phrase is intended to limit the claimed antisense oligonucleotide to the full-length contiguous sequence of SEQ ID NO: 247, or if the phrase is intended to limit the claimed antisense oligonucleotide to comprise a fragment or subsequence of contiguous nucleotides that are less than the full length sequence of SEQ ID NO: 247.

10. Claims 142-145 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett et al. (US Patent No. 6172216, Published January 9, 2001).

11. The prior art is applied to the extent that the antisense oligonucleotide of claim 142 is interpreted to comprise a fragment or subsequence of contiguous nucleotides that are less than the full length sequence of SEQ ID NO: 247.

12. Bennett et al. discloses an antisense oligonucleotide 20 nucleobases in length (SEQ ID NO: 22), wherein said antisense oligonucleotide comprises 13 identical nucleobases with SEQ ID NO: 247 of the instant application. SEQ ID NO: 22 of Bennett et al. comprises a region of 9 contiguous nucleobases that are 100% complementary to nucleobases 3258-3268 of SEQ ID NO: 3 of the instant application.

ISIS No. 16000, see col. 29, Table 3, has the sequence as set forth in the antisense oligonucleotide of SEQ ID NO: 22 (as described above), wherein said antisense oligonucleotide is a chimeric oligonucleotide, comprising wherein positions 1-5 and 16-20 comprise a 2'-MOE modification (other positions comprise 2'-deoxy modifications), all 2'-MOE cytosines are 5-methylcytosines, and all linkages are phosphorothioate linkages.

Bennett et al. also teach wherein the antisense compounds of their invention comprise sodium salts, see for example, col. 11, lines 14-23. Additionally, the invention of Bennett et al. also includes compositions comprising the disclosed antisense compounds in combination with a pharmaceutically acceptable carrier or diluent, see col. 14.

Double Patenting

13. Claims 109-141 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-34 of copending Application No. 10/920,612, Applicants request that this rejection be held in abeyance until allowable subject matter is indicated. Therefore, the instant rejection is maintained for the reasons of record since the merits of this rejection were not addressed.

14. Claims 142-145, and newly added claims 197-212 were not included in the double patenting rejection over copending application 10/920,612. However, these claims are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-34 of copending Application No.

10/920,612, in view of Bennett et al. (US 6172216). Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant claims and those of the copending application are drawn to antisense compounds that specifically hybridizes with nucleobases 3230-3288 as set forth in SEQ ID NO: 3. The instant claims differ from the copending claims to the extent that they are drawn to antisense compounds that are 12 to 30 nucleobases in length, and those of the copending application comprise antisense compounds that are 8 to 50 nucleobases in length. However, it is clear from the specification of the copending application that the range of 12 to 30 nucleobases is an obvious alternative embodiment of their claimed invention, see for example, page 21, 2nd paragraph.

The claims of the instantly claimed invention differ from the claims of the copending application to the extent that they do not teach lipid conjugates to the claimed oligonucleotide compounds.

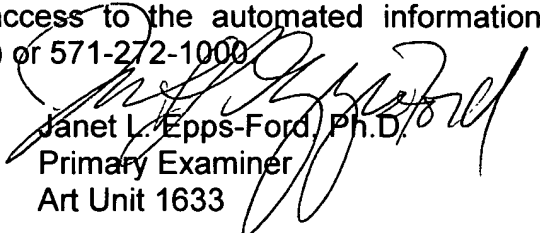
Bennett et al. teach chimeric antisense compounds comprising comprising phosphorothioate linkages, 5-methylcytidine modifications, and 2'-MOE wings, wherein antisense compounds comprising these modifications possess enhanced cellular uptake, enhanced affinity for nucleic acid target and increased stability in the presence of nucleases (see col. 6, lines 25-29). Additionally, Bennett et al. teach that the addition of a lipid conjugate such as cholesterol to antisense compounds would enhance the activity, cellular distribution or cellular uptake of the oligonucleotide (see col. 9, lines 26-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the oligonucleotide compounds recited in the instant application to comprise a lipid moiety since this class of modification is well known in the art to increase the cellular activity of antisense oligonucleotides by enhancing cellular uptake of the molecule.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps-Ford whose telephone number is 571-272-0757. The examiner can normally be reached on M-F, 10:00 AM through 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave T. Nguyen can be reached on 571-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Janet L. Epps-Ford, Ph.D.
Primary Examiner
Art Unit 1633

JLE